

REMARKS

Claims 1, 2, 4-16, 18-25, 27-31, 33-36, 38-42 and 44-75 are pending in the application.

The Examiner objects to claims 61 and 64 because of informalities.

The Examiner rejects claims 1, 2, 6-9, 12-16, 18-21, 23, 25, 27-30, 33-36, 38-42, 47, 53-55, 70-71, and 74-75 under 35 U.S.C. § 103(a) as being unpatentable over Interrante et al. (U.S. Pat. 6,011,783) in view of Legare (U.S. Patent 6,400,802) and further in view of Meek (U.S. Patent 5,745,564).

The Examiner rejects claims 5, 11, 45-46, 48-49, 51-52, 57-61, and 72 under 35 U.S.C. § 103(a) as being unpatentable over Interrante in view of Legare.

The Examiner rejects claims 4, 10, 62-65, and 73 under 35 U.S.C. § 103(a) as being unpatentable over Interrante in view of Legare in view of Meek and further in view of Tol et al. (U.S. Pat. No. 4,918,685).

The Examiner rejects claims 44, 50, and 56 under 35 U.S.C. § 103(a) as being unpatentable over Interrante in view of Legare and further in view of Tol.

The Examiner rejects claims 22, 31, and 66-69 under 35 U.S.C. § 103(a) as being unpatentable over Interrante in view of Legare in view of Meek and further in view of Suzuki et al. (US Patent 5,533,121).

The Examiner rejects claim 24 under 35 U.S.C. § 103(a) as being unpatentable over Interrante in view of Legare and in view of Meek and further in view of Younce et al. (US Patent 5,274,705).

The Applicant amends claims 1, 5, 7, 9, 11, 13, 20, 23-24, 29, 31, 35, 38-39, 41, 45, 47, 61-62, and 64. The Applicant adds claims 76-81. Claims 1-2, 4-16, 18-15, 27-31, 33-36, 38-42, and 44-81 remain in the case.

The Applicant adds no new matter and requests reconsideration.

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Claim Objections

The Applicant amends claims 61 and 64 to correct typographical errors thereby removing the Examiner's objections.

Claim Rejections Under § 103(a)

The Examiner primarily cites Iterrante as disclosing the most of the elements of all of the independent claims. The Applicant traverses.

Iterrante discloses a method and apparatus for monitoring echo cancellation performance within a telephone communications network. Iterrante more specifically discloses "an embedded...monitoring circuit" that "comprises three units, namely, a test data injection unit, an echo path simulator unit, and a test data extraction unit." Iterrante, Abstract. Iterrante discloses a monitoring circuit that is necessarily embedded, that is, part of the echo canceller itself "such that additional measuring equipment external to the telephone communications network is not required." Iterrante, column 2, lines 38-42. Terrance's system, therefore, injects test data into a stream 13 responsive to a control word from a microprocessor. The echo path simulator unit 30 simulates an echo path of the network by attenuating the test data on stream 13 and looping the test data back to the echo canceller 11. The echo canceller 11 shifts the attenuated data on stream 15. The test data extraction unit 40 extracts the test data from stream 15 to produce a signal indicative of the echo canceller 11's performance. Iterrante, columns 3 and 4.

The present invention, in contrast, is directed to a voice quality test (VQT) platform used for testing an echo canceller in packet based telephone system. The echo canceller under test is located inside the transmission channel 16 between PBX 20 and PBX 28. The VQT platform, on the other hand, is connected to the transmission network and originates and terminates a call between the two telephony interfaces (e.g., between caller 1 and caller 2 in Figure 5) of transmission network under test. In other words, the VQT platform is not embedded within the echo canceller itself.

An advantage of the present invention is that the echo path need not be "simulated" as in Interrante. The echo path measured is the exact path taken by the communication packets in the call between callers 1 and 2. Terrance's invention simulates the path by attenuating the test data in stream 13 using a lookup table in which "multiple attenuation factors are programmed and stored." Iterrante, column 3, lines 38-43.

Claim 1 recites generating a *packetized excitation signal*. A packet is a unit of binary data capable of being routed through a computer network. Although the packet typically

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includes a header and a body (test portion), and might additionally include a footer, it is a single unit or signal. In embodiments of the invention, the excitation signal might comport to either ITU-T G.165 or G.168 standards. Independent claims 9, 20, 23, 29, 35, 38, and 45 include a similar limitation.

The Examiner alleges Iterrante discloses the excitation signal with the combination of its control word and test data. But the control word and test data are distinct, separate signals for distinct, separate purposes received by the echo canceller at distinct, separate terminals — the control word is received by the receive data terminal while the test data is received by the test data block 12 (the test block 12 appears to receive parallel test data that would require more than a single terminal for its receipt (see e.g., column 3, lines 18-19))—. The control word and test data are not a packetized excitation signal as is recited in the claims.

Claim 1 recites encoding the preamble portion with configuration information relating to the echo canceller and transmitting the excitation signal to the echo canceller *through a network*. Claims 9, 20, 23, 29, 35, 38, and 45 include a similar limitation. That is, the excitation signal including a preamble and test portion, are transmitted to the echo canceller through a packetized network. Iterrante, on the other hand, does not “transmit” the control word and test data through a network as the recited packetized excitation signal.

Conclusion

The Applicant requests allowance of all claims as amended. The Applicant encourages the Examiner to telephone the undersigned at (503) 222-3613 if it appears that an interview would be helpful in advancing the case.

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